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# Coursera - Creating an AWS EC2 Autoscaling Group using Load Balancer

Generated on December 20, 2023

## Summary

Notes

Screenshots

Bookmarks

22

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0

Task 7:

Load Testing Our Auto Scaling Group

0:08

The screenshot shows the AWS Management Console interface. The left sidebar contains navigation links for various AWS services. The main content area is titled 'Create Load Balancer' and shows a table of existing load balancers. The table has columns for Name, DNS name, State, VPC ID, and Availability Zones. One load balancer is listed: 'autoscaling-lb' with DNS name 'autoscaling-lb-255201861.us-east-2.elb.amazonaws.com', state 'active', VPC ID 'vpc-ca5df1a1', and availability zones 'us-east-2a, us-east-2c, ...'. Below the table, there is a section for 'Load balancer: autoscaling-lb' with tabs for Description, Listeners, Monitoring, Integrated services, and Tags. The 'Description' tab is selected, showing the 'Basic Configuration' section with fields for Name, ARN, and DNS name.

0:31

the last instance is in auto-scaling group

so we will terminate this and see what happens.

▶ 0:51

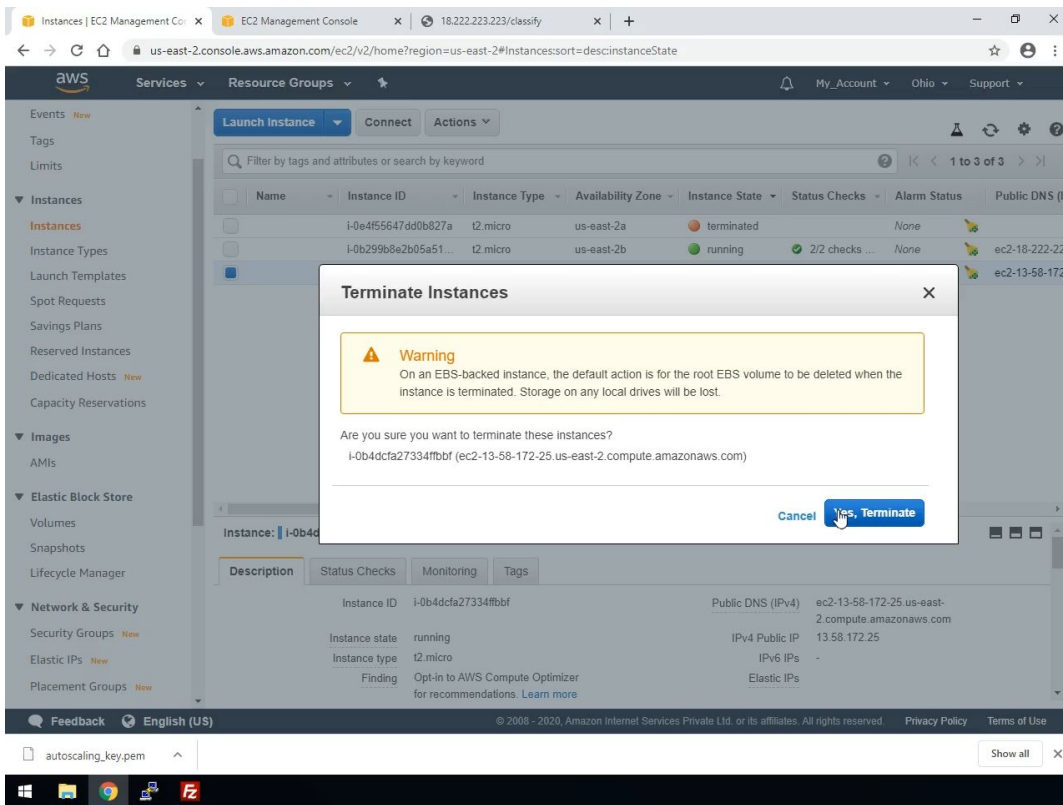
The screenshot shows the AWS Management Console interface. On the left, the navigation pane lists various services like Events, Tags, Limits, Instances, Images, Elastic Block Store, and Network & Security. The main content area displays a list of EC2 instances. The instance 'i-0b4dcfa27334fbbbf' is selected, and the 'Actions' menu is open, showing options like 'Connect', 'Create Template From Instance', 'Launch More Like This', 'Instance State', 'Instance Settings', 'Image', 'Networking', 'CloudWatch Monitoring', and 'Terminate'. The 'Terminate' option is highlighted. Below the list, the details for the selected instance are shown, including its ID, state (running), type (t2.micro), and public DNS (ec2-13-58-172-25.us-east-2.compute.amazonaws.com).

Name	Instance ID	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IP)
	i-0e4f5647dd00		terminated		None	
	i-0b299b8e2b05		running	2/2 checks ...	None	ec2-18-222-22
	i-0b4dcfa27334fbbbf		running	2/2 checks ...	None	ec2-13-58-172

Instance: i-0b4dcfa27334fbbbf Public DNS: ec2-13-58-172-25.us-east-2.compute.amazonaws.com

Description		Status Checks	Monitoring	Tags
Instance ID	i-0b4dcfa27334fbbbf			
Instance state	running			
Instance type	t2.micro			
Finding	Opt-in to AWS Compute Optimizer for recommendations. Learn more			
Public DNS (IPv4)	ec2-13-58-172-25.us-east-2.compute.amazonaws.com			
IPv4 Public IP	13.58.172.25			
IPv6 IPs	-			
Elastic IPs				

▶ 1:12



▶ 1:16

now Our Load Balancer Would not Work,  
because we do not have any instance.

▶ 1:29

EC2 Management Console

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LoadBalancers:sort=loadBalancerName

Services Resource Groups

Create Load Balancer Actions

Filter by tags and attributes or search by keyword

Name	DNS name	State	VPC ID	Availability Zones
autoscaling-lb	autoscaling-lb-255201861.us-east-2.elb.amazonaws.com	active	vpc-ca5df1a1	us-east-2a, us-east-2c, ...

Load balancer: autoscaling-lb

Description Listeners Monitoring Integrated services Tags

Basic Configuration

Name	autoscaling-lb
ARN	arn:aws:elasticloadbalancing:us-east-2:214856675350:loadbalancer/app/autoscaling-lb/777502d35af07392
DNS name	autoscaling-lb-255201861.us-east-2.elb.amazonaws.com

Feedback English (US)

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autoscaling\_key.pem Show all

1:36

copy the DNS name

1:36

EC2 Management Console

autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/classify

autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/classify

Google

Search Google or type a URL

AWS Manage... http://autosca... http://18.222...

Locust Web Store Add shortcut

Helpful tips to avoid COVID-19 online scams Customize

autoscaling\_key.pem Show all

▶ 1:47



▶ 1:49

let's wait for a minute or two,  
the load balancer will do couple of health checks and  
it will see if the instance is returning 200 status code

▶ 2:13

so here it is not returning OK status  
as we see it is returning the 500 error code

▶ 2:30

So our auto scaling group will start a new instance

▶ 2:34

EC2 Management Console | Instances | EC2 Management Co | 18.222.223.223/classify | 503 Service Temporarily Unavailable | +

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:sort=descinstanceState

Services | Resource Groups | My Account | Ohio | Support

New EC2 Experience

EC2 Dashboard | Events | Tags | Limits

Instances

Instance Types | Launch Templates | Spot Requests | Savings Plans | Reserved Instances | Dedicated Hosts | Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes | Snapshots | Lifecycle Manager

Network & Security

Security Groups

Launch Instance | Connect | Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (0
	i-0b4dcfa27334fbbf	t2.micro	us-east-2a	terminated		None	
	i-0e4f55647dd0b827a	t2.micro	us-east-2a	terminated		None	
	i-0b299b8e2b05a51...	t2.micro	us-east-2b	running	2/2 checks ...	None	ec2-18-222-22
	i-0717cdf46deeb25cf	t2.micro	us-east-2a	pending	Initializing	None	ec2-13-58-150

Select an instance above

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autoscaling\_key.pem | Show all

2:47

auto scaling group has started a new instance

2:52

EC2 Management Console | Instances | EC2 Management Co | 18.222.223.223/classify | autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/classify

Not secure | autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/classify

```
{
  "results": {
    "results": 1
  }
}
```

autoscaling\_key.pem | Show all

▶ 3:22

now it's working perfectly!!

▶ 3:24

Now our final task is to load test our application

▶ 3:32

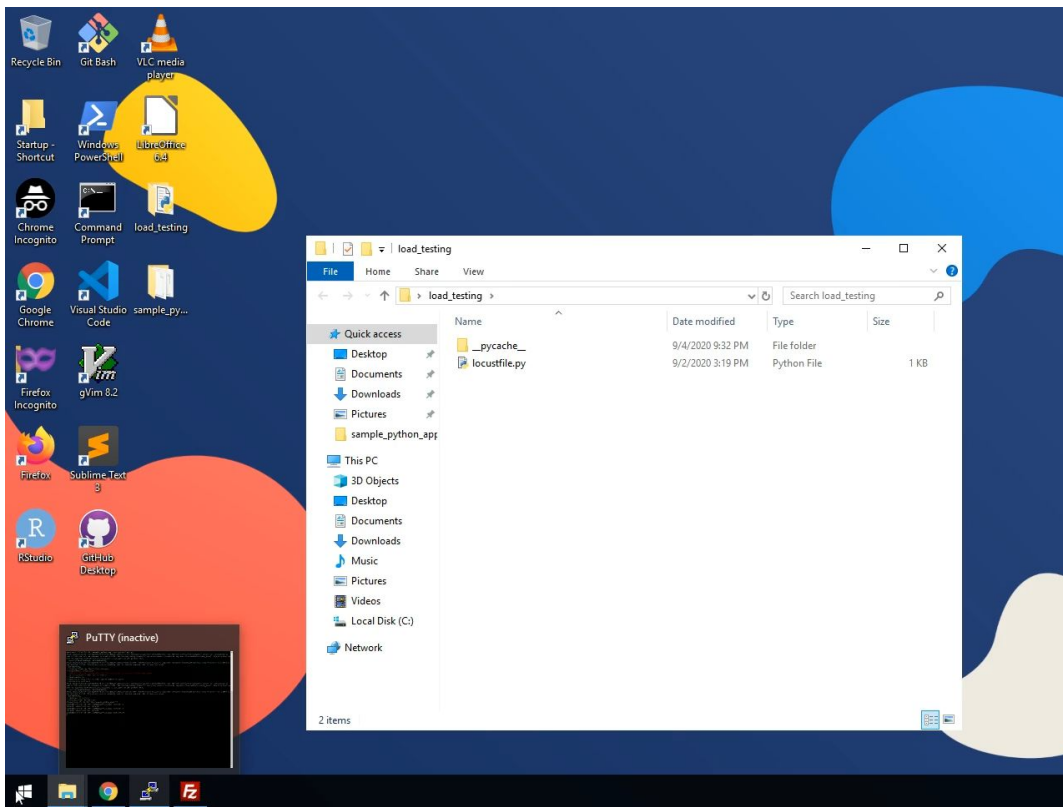
we will use LOCUST.(search web)

so basically we will be simulating a lot of requests to our application, which increase its CPU utilisation

▶ 4:02



▶ 4:20

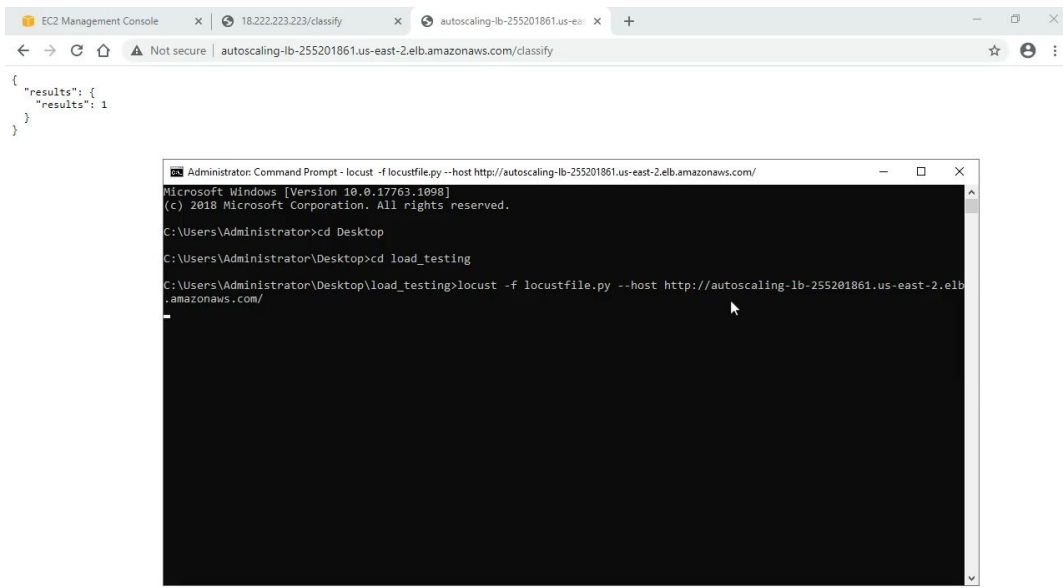


▶ 4:23

do not write classify in the last here!!!

▶ 5:10

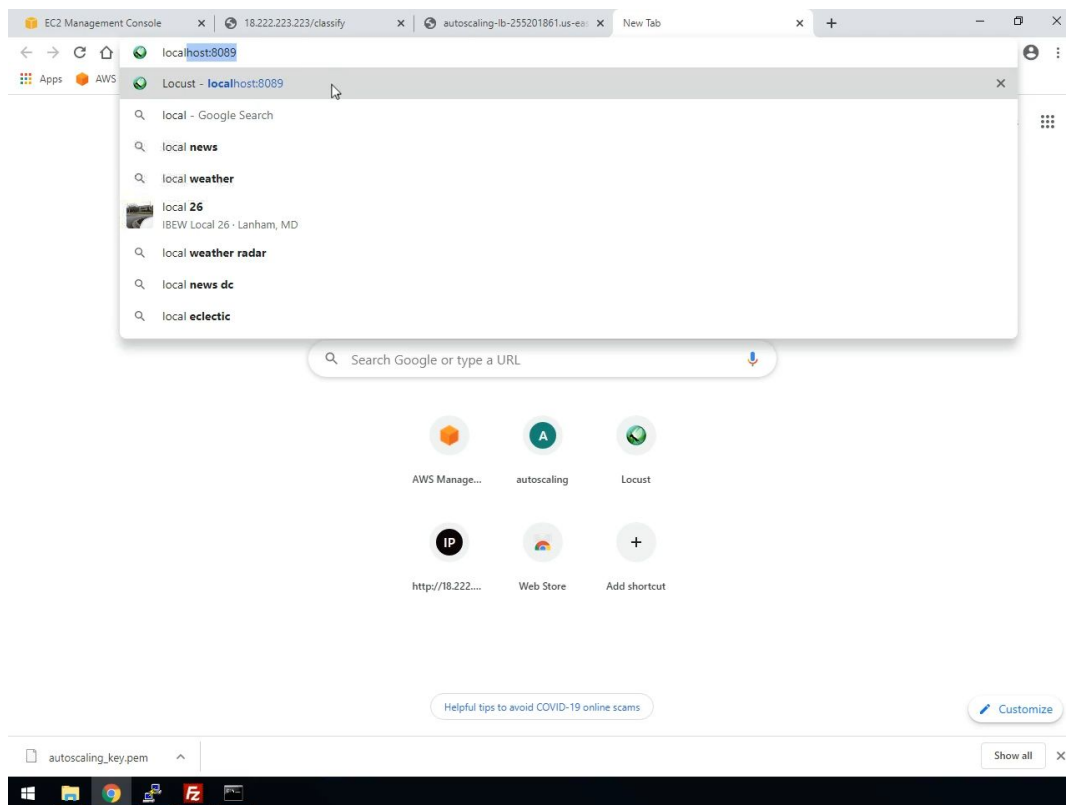




▶ 5:10

so our locust application should be running on 8089 port.

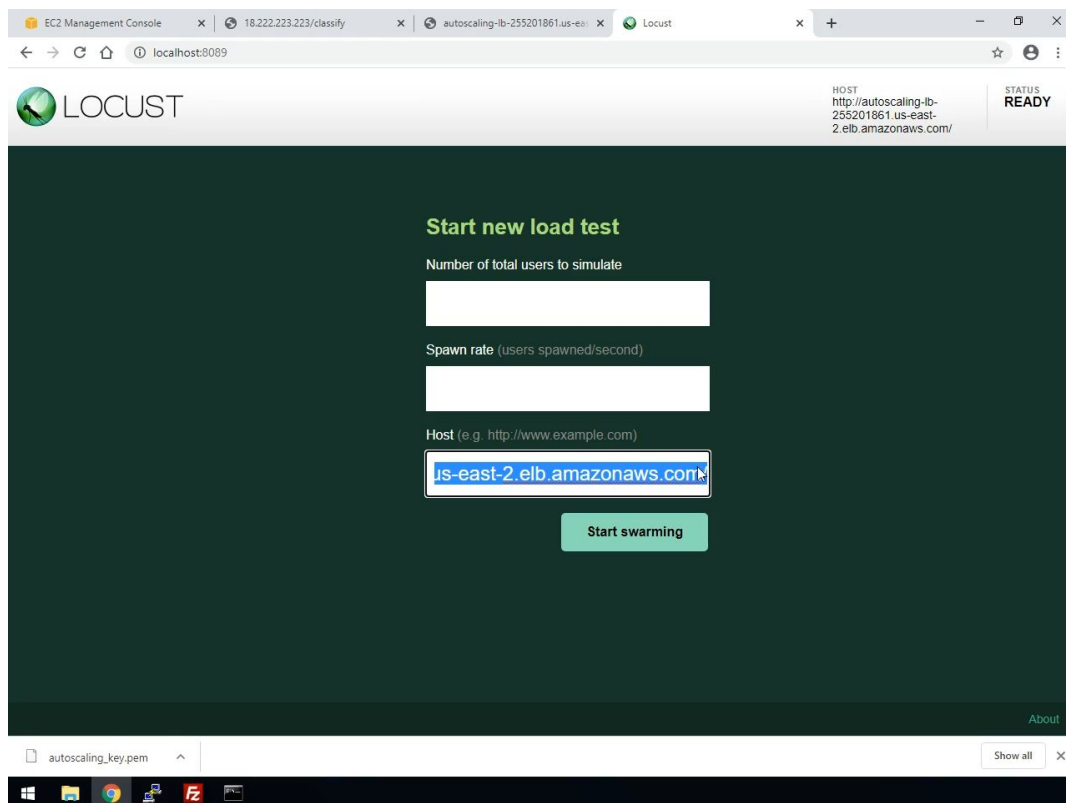
▶ 5:21



5:28

here we can see our auto-scaling group address

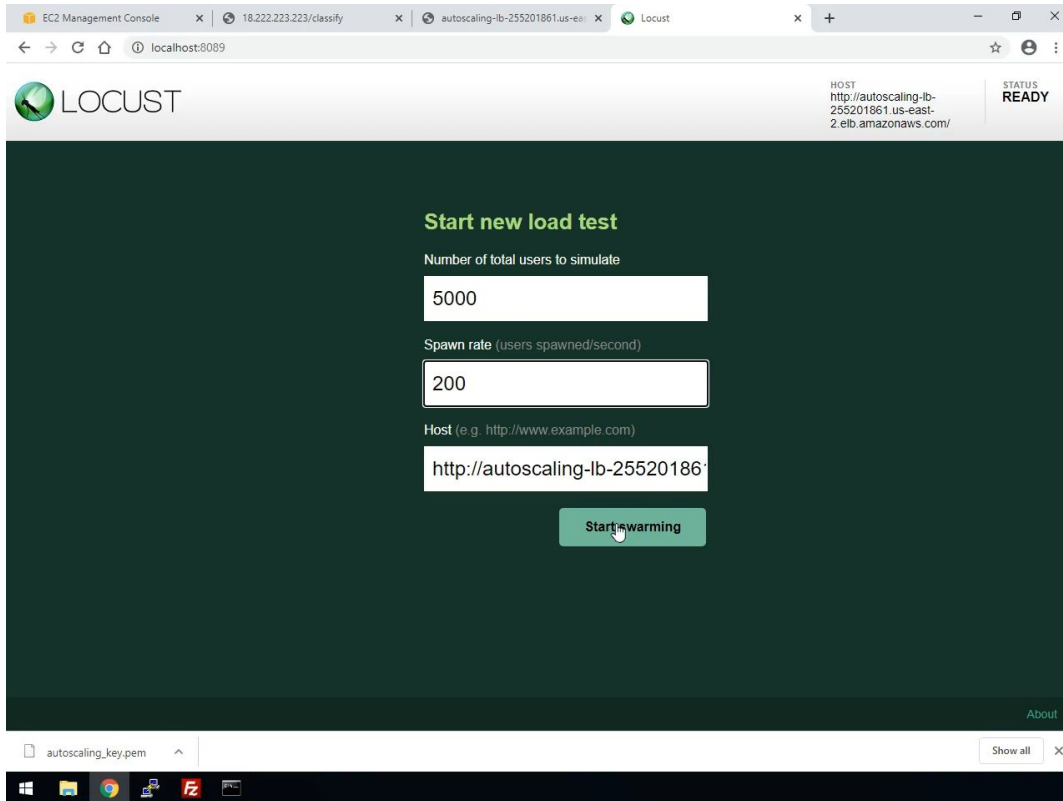
5:34



▶ 5:34

we can specify the number of users we want to stimulate  
in our host >> Avg.CPU utilization is >> 50%  
if above 50% it will launch a new insatnce

▶ 5:44



▶ 6:01

it will send 500 request per second (RPS)

▶ 6:42

EC2 Management Console

18.222.223.223/classify

autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/

Locust

localhost:8089

LOCUST

HOST  
http://autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/

STATUS  
STOPPED  
New test

RPS  
278.1

FAILURES  
0%

StatisticsChartsFailuresExceptionsDownload Data

Type	Name	# Requests	# Fails	Median (ms)
GET	/classify	6641	8	470
Aggregated		6641	8	470

Start new load test

Close

Number of total users to simulate  
50000

Spawn rate (users spawned/second)  
500

Host (e.g. http://www.example.com)  
http://autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/

Start swarming

Average size (bytes)	Current RPS	Current Failures/s
40	278.1	0
40	278.1	0

About

autoscaling\_key.pem

Show all

6:42

EC2 Management Console

18.222.223.223/classify

autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/

Locust

localhost:8089

LOCUST

HOST  
http://autoscaling-lb-255201861.us-east-2.elb.amazonaws.com/

STATUS  
SPAWNING  
5288 users  
Edit

RPS  
338.4

FAILURES  
8%

STOP

Reset Stats

StatisticsChartsFailuresExceptionsDownload Data

Type	Name	# Requests	# Fails	Median (ms)	90%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	/classify	10243	791	610	7900	1965	94	21094	48	338.4	62.6
Aggregated		10243	791	610	7900	1965	94	21094	48	338.4	62.6

About

autoscaling\_key.pem

Show all

7:19

request failing start

CPU Utilization is up from the limit

so let's check

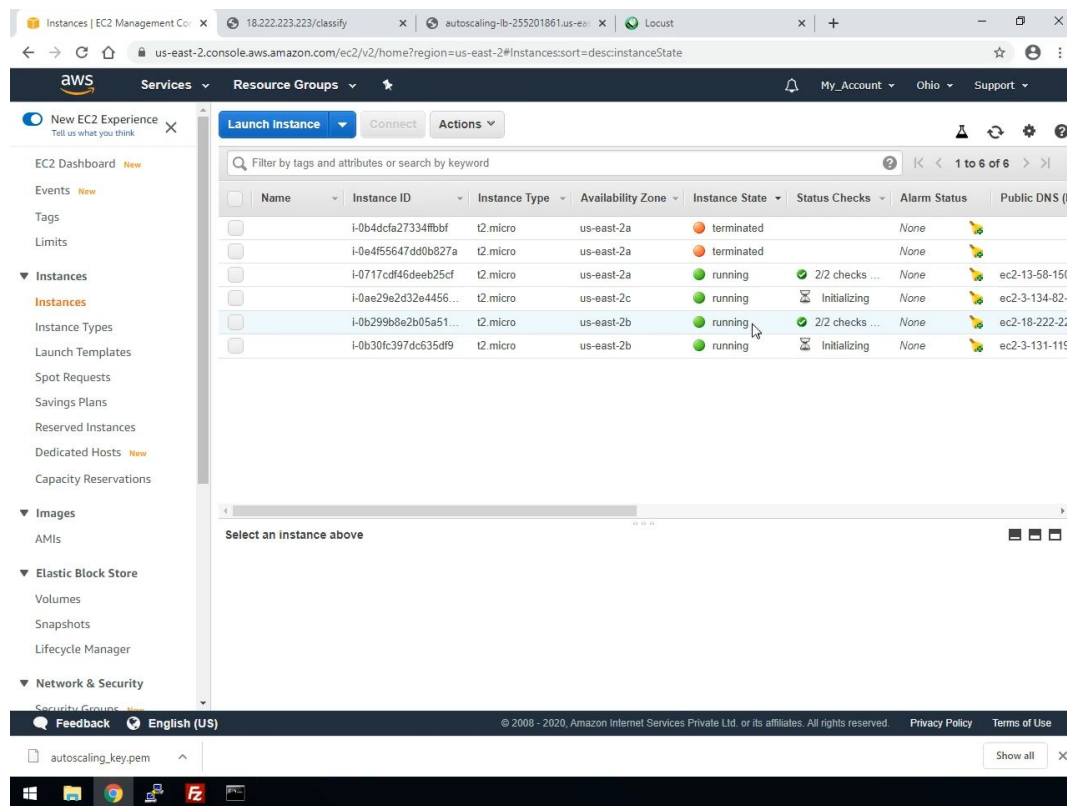
▶ 7:19

it will take time

wait and then refresh the instances tab

and you will see auto-scaling group will launch a new instance

▶ 8:40



The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar contains navigation links for various AWS services. The main content area displays a table of EC2 instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. There are six instances listed. Two instances are in a 'terminated' state, and four are in a 'running' state. The 'running' instances are highlighted in blue. The 'Status Checks' column shows that the 'running' instances have passed their status checks, while the 'terminated' instances have failed.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
	i-0b4dcfa27334fbbf	t2.micro	us-east-2a	terminated		None	
	i-0e4f55647dd0b827a	t2.micro	us-east-2a	terminated		None	
	i-0717cdf46deeb25cf	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-13-58-150
	i-0ae29e2d32e4456...	t2.micro	us-east-2c	running	Initializing	None	ec2-3-134-82-
	i-0b299b8e2b05a51...	t2.micro	us-east-2b	running	2/2 checks ...	None	ec2-18-222-22
	i-0b30fc397dc635df9	t2.micro	us-east-2b	running	Initializing	None	ec2-3-131-119

▶ 9:03

two instance initialize because there have lot of requests send to our ec2-insatnce

▶ 9:10

so when these instance start running it will decrease the fail requests

▶ 9:40

## Deleting Everything >>> Prevent Billing Cost

▶ 10:40

The screenshot shows the AWS Management Console interface for the 'Auto Scaling groups' page. The left sidebar contains navigation links for EC2 Dashboard, INSTANCES, IMAGES, and ELASTIC BLOCK STORE. The main content area displays a list of Auto Scaling groups with columns for Name, Launch template/configuration, Instances, Status, and Desired capacity. One group, 'AutoScaling-Pythc', is selected. The 'Delete' button is highlighted for this group. Below the list, the 'Group details' section is visible, showing information such as Desired capacity (3), Minimum capacity (1), Maximum capacity, Auto Scaling group name (AutoScaling-Python), Date created (Fri Sep 04 2020 21:11:52 GMT+0000), and Amazon Resource Name (ARN).

EC2 Management Console

us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#/details?id=AutoScaling-Python&view=details

Save Up to 90% on Compute

Optimize compute costs by creating your Auto Scaling group with a launch template to combine EC2 On-Demand, Spot and RIs.

Learn more

EC2 > Auto Scaling groups

Auto Scaling groups (1/1)

Search your Auto Scaling groups

1

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity
<input checked="" type="checkbox"/>	AutoScaling-Pythc	autoscaling-lc	3	-	3

Details Activity Automatic scaling Instance management Monitoring Instance refresh

Group details

Desired capacity: 3

Minimum capacity: 1

Maximum capacity:

Auto Scaling group name: AutoScaling-Python

Date created: Fri Sep 04 2020 21:11:52 GMT+0000 (Greenwich Mean Time)

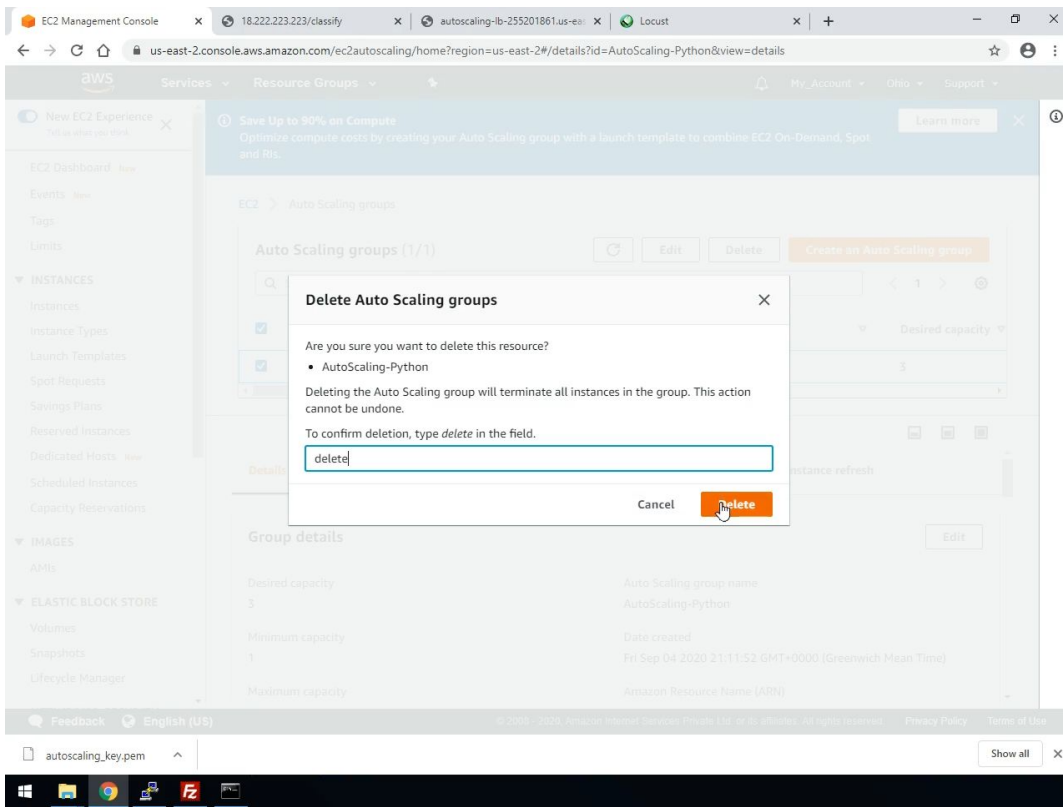
Amazon Resource Name (ARN):

Feedback English (US)

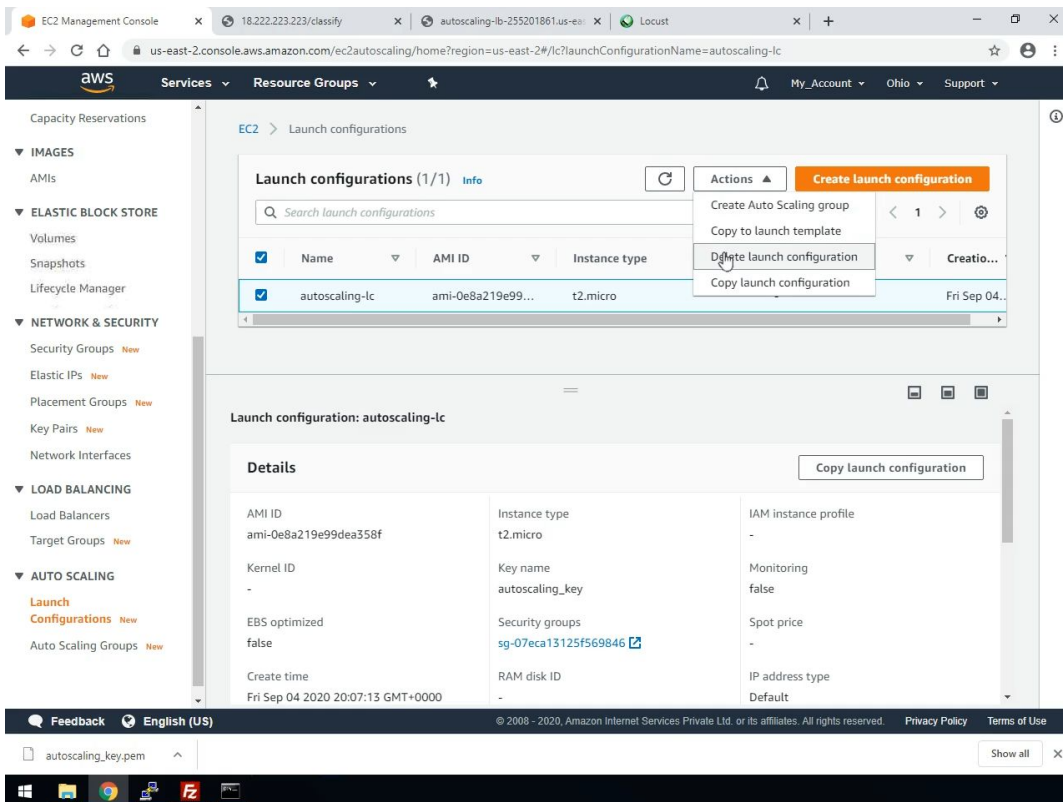
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autoscaling\_key.pem Show all

▶ 11:16



11:24



11:42

1-delete auto scaling group

2-delete launch configurations

3-delete load balancer

4-delete Target Groups

5-delete ec2-instances

6-delete AMI

▶ 11:48

The screenshot shows the AWS Management Console interface for the 'Target groups' page. The left sidebar contains navigation links for various AWS services. The main content area displays a table of target groups. One target group is listed with the name 'autoscalin...', ARN 'arn:aws:elasticload...', port 80, protocol HTTP, target type 'Instance', load balancer 'autoscaling-lb', and VPC 'vpc-'. The 'Actions' menu for this target group is open, and the 'Delete' option is highlighted.

Target groups (1/1)

Filter resources by property or value

<input checked="" type="checkbox"/>	Name	ARN	Port	Protocol	Target type	Load balancer	VPC
<input checked="" type="checkbox"/>	autoscalin...	arn:aws:elasticload...	80	HTTP	Instance	autoscaling-lb	vpc-

▶ 11:59



EC2 Management Console | 18.222.223.223/classify | autoscaling-lb-255201861.us-east-2 | Locust

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LoadBalancers:sort=loadBalancerName

Services | Resource Groups | Actions

Reserved Instances  
Dedicated Hosts  
Capacity Reservations

Images  
AMIs

Elastic Block Store  
Volumes  
Snapshots  
Lifecycle Manager

Network & Security  
Security Groups  
Elastic IPs  
Placement Groups  
Key Pairs  
Network Interfaces

Load Balancing  
Load Balancers  
Target Groups

Auto Scaling  
Launch Configurations  
Auto Scaling Groups

Create Load Balancer | Filter by tags and attributes

Load balancer: autoscaling-lb

Description | Listeners | Monitoring | Integrated services | Tags

Basic Configuration

Name	autoscaling-lb
ARN	arn:aws:elasticloadbalancing:us-east-2:214856675350:loadbalancer/app/autoscaling-lb/777502d35af07392
DNS name	autoscaling-lb-255201861.us-east-2.elb.amazonaws.com

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autoscaling\_key.pem | Show all

12:25

Instances | EC2 Management Console | 18.222.223.223/classify | autoscaling-lb-255201861.us-east-2 | Locust

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:sort=descinstanceState

Services | Resource Groups | Actions

Tags  
Limits

Instances  
Instances  
Instance Types  
Launch Templates  
Spot Requests  
Savings Plans  
Reserved Instances  
Dedicated Hosts  
Capacity Reservations

Images  
AMIs

Elastic Block Store  
Volumes  
Snapshots  
Lifecycle Manager

Network & Security  
Security Groups  
Elastic IPs  
Placement Groups  
Key Pairs

Launch Instance | Connect | Actions

Filter by tags and attributes or search

Name	Instance ID	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
	i-0b4dcfa27334f...	us-east-2a	terminated	2/2 checks ...	None	
	i-0e4f55647dd00...	us-east-2a	terminated	2/2 checks ...	None	
	i-0ae29e2d32e40...	us-east-2a	stopping...	2/2 checks ...	None	ec2-3-134-82-...
	i-0b30fc397dc63...	us-east-2a	stopping...	2/2 checks ...	None	ec2-3-131-119
	i-0717cdf46deeb25cf	us-east-2a	running	2/2 checks ...	None	ec2-13-58-150
	i-0b299b0e2b05a51...	us-east-2b	running	2/2 checks ...	None	ec2-18-222-22

Instance: i-0717cdf46deeb25cf | Public DNS: ec2-13-58-150-36.us-east-2.compute.amazonaws.com

Description | Status Checks | Monitoring | Tags

Instance ID	i-0717cdf46deeb25cf	Public DNS (IPv4)	ec2-13-58-150-36.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	13.58.150.36
Instance type	t2.micro	IPv6 IPs	-
Finding	Opt-in to AWS Compute Optimizer for recommendations. Learn more	Elastic IPs	

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autoscaling\_key.pem | Show all

13:18

AMIs | EC2 Management Console

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Images:sort=name

Services Resource Groups

Launch EC2 Image Builder Actions

Owned by me Filter by tags and attributes or search by keyword

Name	AMI Name	AMI ID	Source	Owner	Visibility	Status	Creation Date
autoscaling	autoscaling-demo-image	ami-0e8a219e99dea358f	214856675350/...	214856675350	Private	available	September 4, 2020

Image: ami-0e8a219e99dea358f

Details Permissions Tags

AMI ID: ami-0e8a219e99dea358f  
Owner: 214856675350  
Status: available  
Creation date: September 4, 2020 at 7:15:51 PM UTC

AMI Name: autoscaling-demo-image  
Source: 214856675350/autoscaling-demo-image  
State Reason: -  
Platform details: Linux/UNIX

Feedback English (US)

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13:38

AMIs | EC2 Management Console

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Images:sort=name

Services Resource Groups

Launch EC2 Image Builder Actions

Owned by me Filter by tags and attributes or search by keyword

Name	AMI Name	AMI ID	Source	Owner	Visibility	Status	Creation Date
autoscaling-de...	autoscaling-demo-image	ami-0e8a219e99dea358f	214856675350/...	214856675350	Private	available	September 4, 2020

Deregister

Are you sure you want to deregister these images?

- ami-0e8a219e99dea358f - autoscaling-demo-image

Cancel Continue

Image: ami-0e8a219e99dea358f

Details Permissions Tags

AMI ID: ami-0e8a219e99dea358f  
Owner: 214856675350  
Status: available  
Creation date: September 4, 2020 at 7:15:51 PM UTC

AMI Name: autoscaling-demo-image  
Source: 214856675350/autoscaling-demo-image  
State Reason: -  
Platform details: Linux/UNIX

Feedback English (US)

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autoscaling\_key.pem Show all

13:42